

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the matter of	)	
	)	
Amendment of Parts 25, 74, 78 and 101 of the	)	ET Docket No. 03-254
Rules Regarding Coordination Between the	)	
Non-Geostationary and Geostationary Satellite	)	
Orbit Fixed-Satellite Service and Fixed,	)	
Broadcast Auxiliary and Cable Television	)	
Relay Services in the 7 GHz, 10 GHz and	)	
13 GHz Frequency Bands	)	

**REPLY COMMENTS OF XM RADIO INC.**

XM Radio Inc. (“XM Radio”) hereby file these Reply Comments in the above-captioned proceeding in which the Commission is, among other things, considering modifications to its coordination rules to facilitate sharing between geostationary satellite orbit (“GSO”) fixed satellite service (“FSS”) uplink earth stations and fixed and mobile Broadcast Auxiliary Service (“BAS”) and Cable Television Relay Service (“CARS”) operators in the 6875-7075 MHz (7 GHz) band.<sup>1</sup> XM Radio supports the proposed coordination rules and urges the Commission to refrain from adopting the proposal of the Society of Broadcast Engineers (“SBE”) only to the extent it was intended to advocate a prohibition on 7 GHz uplink earth stations communicating with GSO satellites within 150 kilometers of the top 100 television markets.<sup>2</sup> If indeed SBE intended to propose such a restriction, it should be rejected because it is not necessary to protect BAS/CARS operators, will frustrate the Commission’s goal of facilitating sharing in the 7 GHz band, and will impose substantial and needless costs on XM Radio.

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<sup>1</sup> *Amendment of Parts 25, 74, 78 and 101 of the Rules, Notice of Proposed Rulemaking*, FCC 03-318, ET Docket No. 03-254 (rel. December 23, 2003) (“*NPRM*”).

<sup>2</sup> Comments of the Society of Broadcast Engineers, Inc., ET Docket No. 03-254 (March 3, 2004) (“*SBE Comments*”).

## Background

*XM Radio and Its Authorized Feeder Link Frequencies.* In March 1997, the Commission adopted service and licensing rules for the new Satellite Digital Audio Radio Service (“SDARS” or “satellite radio”) and recognized the enormous public interest benefits this new consumer-based mass media service would offer for the American public.<sup>3</sup> In its decision, the Commission noted that in addition to service link frequencies for transmission of programming to subscribers’ receivers, SDARS licensees would also need access to feeder link frequencies to uplink programming to their satellites.<sup>4</sup> The Commission identified the 7025-7075 MHz FSS frequencies for SDARS feeder links.<sup>5</sup> The Commission determined that SDARS operators would be licensed to use these feeder link frequencies on a co-primary basis with the BAS and CARS operators that share the band. *SDARS Order* ¶¶ 134-135. The Commission emphasized that it “will authorize satellite DARS feeder link Earth stations only after the applicant demonstrates that coordination with potentially affected users in the band, including co-primary broadcast users, has been successfully completed.” *Id.* ¶ 134.

In October 1997, the International Bureau (“IB”) granted XM Radio’s application to launch and operate two GSO satellites, one at 85°W and one at 115°W, to provide SDARS.<sup>6</sup> The

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<sup>3</sup> See, e.g., *Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band, Report and Order, Memorandum Opinion and Order*, 12 FCC Rcd 5754, ¶ 1 (1997) (“*SDARS Order*”).

<sup>4</sup> *Id.* ¶ 127 (“We recognized in the Notice that feeder link networks are essential to deliver service to the end user and that ample contiguous spectrum is necessary to implement a viable satellite DARS system.”); *id.* ¶ 129 (“The satellite DARS systems cannot operate without sufficient feeder link spectrum.”).

<sup>5</sup> *Id.* ¶¶ 129-132. The Commission also identified the 6725-7025 MHz band for feeder links for one SDARS applicant (Digital Satellite Broadcasting Corporation) which did not win at the SDARS auction and thus did not implement its system.

<sup>6</sup> See *American Mobile Radio Corp., Order and Authorization*, 13 FCC Rcd 8829 (Int’l Bur., Oct. 16, 1997) (“*XM Radio Licensing Order*”).

IB granted XM Radio's request to use the 7025-7075 MHz band for feeder links and noted XM Radio's willingness to coordinate with existing services in the 7025-7075 MHz band using the same techniques that are used in the coordination of existing FSS earth stations. *XM Radio Licensing Order* ¶ 45.

In April 2000, XM Radio applied for authority to operate two uplink earth stations at its headquarters in Washington, D.C. that would transmit in the 7025-7075 MHz band to its two GSO satellites.<sup>7</sup> This earth station is also used for tracking, telemetry, and control ("TT&C") operations.<sup>8</sup> XM Radio successfully coordinated its proposed operations with co-primary BAS/CARS operators sharing the band. The IB granted XM Radio's application on March 20, 2001.<sup>9</sup>

In September 2001, XM Radio initiated commercial service, providing high-quality, continuous, multi-channel audio service throughout the continental United States. In its first two years of service, XM Radio has proven to be a great success. By year-end 2003, XM Radio had more than 1.36 million subscribers. In February 2004, XM Radio applied to launch and operate replacement satellites for its existing satellites.<sup>10</sup> XM Radio is also planning to operate a backup uplink and TT&C facility using the 7025-7075 MHz band in the Atlanta, Georgia area.<sup>11</sup>

*December 2003 NPRM on Coordination.* In December 2003, the Commission issued the above-captioned *NPRM* proposing to, among other things, modify its rules regarding

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<sup>7</sup> See Application of XM Radio Inc., File No. SES-LIC-20000407-00536 (April 7, 2000).

<sup>8</sup> See Amendment of XM Radio Inc., File No. SES-AMD-20000525-00867 (May 25, 2000).

<sup>9</sup> Call Sign E000158.

<sup>10</sup> See Application of XM Radio Inc., File Nos. SAT-RPL-20040212-00018, SAT-RPL-20040212-00019, SAT-MOD-20040212-00017 (filed February 26, 2004).

<sup>11</sup> The Commission has acknowledged that SDARS licensees can establish redundant uplink facilities. *SDARS Order* ¶ 127 ("Satellite DARS feeder link earth stations will be few in number (*i.e.* one, or possibly two for redundancy, per licensee) and will operate at fixed locations.").

coordination between GSO FSS uplink earth stations and fixed<sup>12</sup> and mobile<sup>13</sup> BAS/CARS operators in the 7 GHz band. *NPRM* ¶¶ 15-35. The Commission states that coordination and sharing between these services should be possible given the limited number of satellite earth stations expected to operate in the band. *Id.* ¶ 15.

For coordination of a new GSO FSS uplink earth station with mobile BAS/CARS operators sharing the 7 GHz band, the Commission proposes to apply the existing coordination procedures in Sections 25.203, 25.251, and 101.103(d) of the rules. *NPRM* ¶ 22. For coordination of a new GSO FSS uplink earth station with fixed BAS/CARS operators sharing the 7 GHz band, the Commission proposes to maintain the coordination procedures in Sections 25.203 and 25.251 of the rules. *Id.* ¶ 34.

For coordination of a new mobile BAS/CARS station with an FSS earth station sharing the 7 GHz band, the Commission proposes to allow the BAS/CARS operators the flexibility to use either the informal *ad hoc* coordination process in Sections 74.638 and 78.36 of the rules or the coordination procedures in Section 101.103(d) of the rules. *NPRM* ¶ 27. For coordination of a new fixed BAS/CARS station with an FSS earth station sharing the 7 GHz band, the Commission proposes to apply the coordination procedures in Sections 101.21(f) and 101.103(d) of the rules. *Id.* ¶ 34.

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<sup>12</sup> In the *NPRM*, the Commission notes that fixed BAS/CARS operators use the 7 GHz band for fixed point-to-point stations, such as studio-transmitter link (“STL”), TV relay (“TVR”), TV translator relay (“TTR”), TV microwave booster (“TVB”) stations, and fixed CARS stations used in a point-to-multipoint configuration to distribute content throughout a cable television system or from one cable television system to another. *NPRM* ¶ 19.

<sup>13</sup> In the *NPRM*, the Commission notes that mobile BAS/CARS operators use the 7 GHz band for television pickup (“TVPU”) stations that are used to perform impromptu electronic newsgathering (“ENG”) at the scene of a breaking event and to cover scheduled events, such as sports or political events. *NPRM* ¶ 16.

In Comments filed on March 3, 2004, SBE notes that an uplink earth station communicating with a GSO satellite in the 7 GHz band “is not nearly the interference threat” to BAS/CARS operators sharing the band compared to uplink earth stations communicating with NGSO satellites. *SBE Comments* ¶ 8. According to SBE, this is because of the wide range of look angles an NGSO uplink would use. *Id.* Despite this focus on the potential for interference from earth stations communicating with NGSO satellites, however, SBE proposes that “no 7 GHz MSS feeder uplinks be allowed within 150 km of the top-100 TV markets” without any apparent limitation to feeder uplinks communicating with NGSO satellites. *Id.*

### **Discussion**

XM Radio urges the Commission to refrain from adopting SBE’s proposal only to the extent it was intended to advocate a prohibition on 7 GHz uplink earth stations communicating with GSO satellites within 150 kilometers of the top 100 television markets. *SBE Comments* ¶ 8. As an initial matter, it is unclear whether SBE intended its proposal to apply to uplink earth stations communicating with either an NGSO or GSO satellite.<sup>14</sup> As SBE acknowledges, GSO uplink earth stations pose far less of an interference threat to BAS/CARS operators than NGSO uplink earth stations. *SBE Comments* ¶ 8. It would appear, therefore, that SBE is appropriately not advocating any restrictions on the location of GSO uplink earth stations in the 7 GHz band.

To the extent SBE did intend to propose a prohibition on GSO uplink earth stations within 150 kilometers of the top 100 television markets, then the Commission should dismiss this proposal because it is not necessary to protect BAS/CARS operators, will frustrate the Commission’s goal of facilitating sharing in the 7 GHz band, and will impose substantial and needless costs on XM Radio. XM Radio has already successfully coordinated its 7 GHz GSO

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<sup>14</sup> SBE’s proposed prohibition would apply to “7 GHz MSS feeder uplinks,” but does not specify whether the uplink is communicating with a GSO or NGSO satellite. *SBE Comments* ¶ 8.

uplink in Washington, DC (a top 100 television market) with BAS/CARS operators and has been operating without any interference complaints since the IB licensed this uplink three years ago. As The Boeing Company (“Boeing”) notes in its Comments, coordination and sharing between uplink earth stations and BAS/CARS operators is feasible for a number of reasons, such as (i) the limited number of uplink earth stations operating in the band;<sup>15</sup> (ii) the ability of earth station operators to identify locations for uplinks that minimize sharing difficulties with BAS/CARS operators; and (iii) the ability of BAS/CARS operators to use techniques to mitigate interference.<sup>16</sup> The coordination procedures proposed by the Commission in the *NPRM* will ensure that both satellite and terrestrial users can co-exist in the 7 GHz band. XM Radio agrees with the Commission that these procedures will “achieve a viable balance between the needs of FSS licensees for certainty and reliability and the needs of BAS/CARS for flexibility.” *NPRM* ¶ 33. Conversely, an exclusion zone approach will only serve to frustrate the Commission’s goal of facilitating sharing in the band. Finally, if adopted and applied to GSO uplinks, SBE’s proposal would result in substantial and needless costs for XM Radio. XM Radio would apparently have to cease operation of its existing 7 GHz GSO uplink in Washington, D.C. and will be restricted in its ability to operate its proposed backup uplink. The substantial costs for XM Radio of building two new uplink sites far outweigh any benefit to BAS/CARS operators, especially considering that XM Radio has experienced no difficulty in coordinating its existing GSO uplink with BAS/CARS operators and has received no interference complaints.

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<sup>15</sup> While Boeing’s Comments address the 13 GHz band, in which 11 GSO uplink earth stations are authorized, there is only one GSO uplink earth station authorized in the 7 GHz band. *NPRM* n.18.

<sup>16</sup> Comments of The Boeing Company, ET Docket No. 03-254 (March 3, 2004), at 2-5.

## **Conclusion**

XM Radio urges the Commission to act consistently with the views expressed herein.

Respectfully submitted,

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